

Crew Clothing Odor Absorbing Stowage Container

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HAT: 06 TA: 6.1 Environmental Control and Life Support Systems and Habitation Systems TRL: start 3 /current 4

ICA PROJECT OVERVIEW

The proposed technology uses advanced activated charcoal cloth that is part of a container that is engineered to contain wet and dry clothing that can become refreshed while being stowed and then are ready for reuse more times. The goal is to reduce the amount of clothing needed on a long duration space mission and to complement a future alternate laundry system.

INNOVATION

Crew exercise clothing is currently discarded as trash after 2-3 uses. This technology would extend the wear of crew exercise clothing by incorporating advanced activated charcoal cloth into an odor absorbing container. Containing odors from worn exercise clothing will also enhance the habitation area of a spacecraft by reducing odors.

OUTCOME / RESULTS

- Crew Clothing Odor Absorbing Container prototype has been completed..
- Testing and evaluation protocol is being discussed but has not started.

INFUSION FOR SPACE / EARTH

- This technology may be used on any long duration mission as part of the crew clothing system to extend the wear of the clothing and as part of the crew clothing laundry system. Earth applications include stowage for worn clothing, gym bags, and laundry hampers.
- Charcoal cloth could also be used in container for storing trash on extended duration Orion missions.

PAPERS/PRESENTATIONS

No papers have been published on this research. A presentation on the concept and prototype was presented as a university student design project by Virginia Tech University in April 2015 at the NASA JSC Wearable Technology Symposium.

PICTURE OF ICA DEVELOPED PROTOTYPE



PARTNERSHIPS / COLLABORATIONS

This charcoal cloth technology has never been used in this capacity for an odor absorbing container.

This project is partnering with the Advanced Clothing System that is part of the Logistics Reduction Project in AES. The project may also partner with Virginia Tech University to improve on the current design.

The project is also partnering with HRP in the use of the Volatile Organic Compound Sensor and determining requirements for measuring the cleanliness levels of clothing.

FUTURE WORK

This technology complements the current work on an alternate laundry system for long duration missions. Future work includes incorporating a fan for air circulation inside the container to increase the odor absorption. Testing for performance will include use of the Volatile Organic Compound Sensor.

